SUBSECTION 8.10

Traffic and Transportation

8.10 Traffic and Transportation

8.10.1 Introduction

This section presents the potential effects of the CVEC project on the transportation system, including any necessary modifications to the transportation system and increase in traffic from construction and operation of the proposed facility. A description of the existing transportation system and levels of service (LOS) are presented, along with an analysis of potential impacts. Figure 8.10-1 (all figures are at the end of this section) shows the project site and the surrounding roadway network within the study area.

Section 8.10.2 presents applicable laws, ordinances, regulations, and standards (LORS); Section 8.10.3 discusses the existing environmental setting; Section 8.10.4 discusses the environmental effects of construction and subsequent operation; Section 8.10.5 describes the cumulative impacts; Section 8.10.6 includes any proposed mitigation measures to be implemented during construction and operation; and Section 8.10.7 contains references.

8.10.2 Laws, Ordinances, Regulations, and Standards

LORS related to traffic and transportation are summarized in the following subsections.

8.10.2.1 Federal

Title 49, Code of Federal Regulations (CFR), Sections 171-177 (49 CFR 171-177), governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.

49 CFR 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.

49 CFR 397.9, the Hazardous Materials Transportation Act of 1974 directs the U.S. Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials.

8.10.2.2 State

State laws that apply to this project include the following sections of the California Vehicle Code (CVC), unless specified otherwise:

- California Street and Highways Code (S&HC), Sections 660, 670, 1450, 1460 *et seq.*, 1470, and 1480, regulates right-of-way encroachment and granting of permits for encroachments on state and county roads.
- Sections 13369, 15275, and 15278 address the licensing of drivers and classifications of licenses required to operate particular types of vehicles. In addition, certificates permitting the operation of vehicles transporting hazardous materials are addressed.
- Sections 25160 *et seq.* address the safe transport of hazardous materials.
- Sections 2500-2505 authorize the issuance of licenses by the Commissioner of the California Highway Patrol (CHP) to transport hazardous materials, including explosives.
- Sections 31303-31309, regulate the highway transportation of hazardous materials, routes used, and restrictions. CVC Section 31303 requires hazardous materials to be transported on state or interstate highways that offer the shortest overall transit time possible.

- Sections 31600-31620 regulate the transportation of explosive materials.
- Sections 32000-32053 regulate the licensing of carriers of hazardous materials and include noticing requirements.
- Sections 32100-32109 establish special requirements for the transportation of substances presenting inhalation hazards and poisonous gases. CVC Section 32105 requires shippers of inhalation or explosive materials to contact the CHP and apply for a Hazardous Material Transportation License. Upon receiving this license, the shipper will obtain a handbook specifying approved routes.
- Sections 34000-34121 establish special requirements for transporting flammable and combustible liquids over public roads and highways.
- Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5, and 34510-11 regulate the safe operation of vehicles, including those used to transport hazardous materials.
- S&HC Sections 117 and 660-72, and CVC Sections 35780 *et seq.*, require permits to transport oversized loads on county roads. S&HC Sections 117 and 660 to 711 requires permits for any construction, maintenance, or repair involving encroachment on state highway rights-of-way. CVC Section 35780 requires the approval for a permit to transport oversized or excessive loads over state highways.
- California State Planning Law, Government Code Section 65302, requires each city and county to adopt a General Plan, consisting of seven mandatory elements, to guide its physical development. Section 65302(b) requires that a circulation element be one of the mandatory elements.
- All construction in the public right-of-way will need to comply with the "Manual of Traffic Controls for Construction and Maintenance of Work Zones" (Caltrans, 1996).
- California Department of Transportation (Caltrans) weight and load limitations for state highways apply to all state and local roadways. The weight and load limitations are specified in the CVC Sections 35550 to 35559. The following provisions, from the CVC, apply to all roadways and are therefore applicable to this project.

  General Provisions:

  – The gross weight imposed upon the highway by the wheels on any axle of a vehicle shall not exceed 20,000 pounds and the gross weight upon any one wheel, or wheels, supporting one end of an axle, and resting upon the roadway, shall not exceed 10,500 pounds.

  – The maximum wheel load is the lesser of the following: a) the load limit established by the tire manufacturer, or b) a load of 620 pounds per lateral inch of tire width, as determined by the manufacturer's rated tire width.

  Vehicles with Trailers or Semitrailers:

  – The gross weight imposed upon the highway by the wheels on any one axle of a vehicle shall not exceed 18,000 pounds and the gross weight upon any one wheel, or wheels, supporting one end of an axle and resting upon the roadway, shall not exceed 9,500 pounds, except that the gross weight imposed upon the highway by the wheels on any front steering axle of a motor vehicle shall not exceed 12,500 pounds.

8.10.2.3 Local

The transportation elements of local plans that are applicable to the CVEC project are summarized in Table 8.10-1 and also in this section.

- City of San Joaquin General Plan (1996), transportation and circulation element, sets forth policies that are applicable to the CVEC project. They are as follows:
  - The City's level of service standards for the state highway system and specific routes of regional significance shall be those standards adopted in the Comprehensive General Plan and EIR.
  - The City shall require all new development projects to analyze their contribution to increased traffic and to implement improvements necessary to address the increase.
- Fresno County Transportation and Circulation Element of the General Plan identifies the goals, policies and implementation programs for streets and highways, transit, transportation system management, bicycle facilities, rail, and air transportation. The plan describes the County's circulation diagram and functional roadway classification system. The element establishes standards that guide the development of the transportation system and management of access to the highway system by new development, throughout the unincorporated areas of the County.

Other regional policies related to the project are described in Table 8.10-1. The following plans and programs describe the framework for managing the transportation resources in the area of the CVEC project site. Table 8.10-1 summarizes the relevant policies for Fresno County transportation and circulation element of the General Plan and the City of San Joaquin Comprehensive General Plan and EIR.

TABLE 8.10-1
Relevant Local Objectives and Policies

Relevant Policies	Conformance of Project with Policy
Fresno County Transportation and Circulation Element of the General Plan	
The County shall plan and design its roadway system in a manner that strives to meet Level of Service (LOS) D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county. In no case should the County plan for worse than LOS D on rural County roadways, worse than E on urban roadways within the spheres of influence of the cities of Fresno and Clovis, or in cooperation with Caltrans and the Council of Fresno County of Governments, plan for worse than E on State highways in the county.	The project will not impact the County's ability to meet LOS rates on a permanent basis. (Section 8.10.4)
The County shall require that new or modified access to property abutting a roadway and to intersecting roads conform to access specifications in the Circulation Diagram and Standards section.	The project will conform to access specifications for the Cherry Lane extension. (Section 8.10.4)
The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system.	The project proponent will submit the necessary fees described in this policy, as determined by the County. (Section 8.10.7)
The County shall work with the cities of Fresno County in establishing a system of designated truck routes through urban areas.	The project will use established truck routes as they are identified. (Section 8.10.3)

TABLE 8.10-1
Relevant Local Objectives and Policies

Relevant Policies	Conformance of Project with Policy
The County shall promote transit services in designated corridors where population and employment densities are sufficient or could be increased to support those transit services, particularly within the spheres of influence of the cities and along existing transit corridors in the rural area of the county.	The project will not interfere with the County's plans to support transit services in rural areas. (Section 8.10.4)
The County shall support improvements to at-grade crossings on the Burlington Northern Santa Fe and Union Pacific mainline and spur or branch line tracks within the County.	The project will not interfere with the County's plans to support improvements for these railroads. (Section 8.10.4)
San Joaquin City Comprehensive General Plan and EIR	
The City shall maintain a minimum LOS C on all arterials and collectors.	The project will not impact the County's ability to meet LOS rates on a permanent basis. (Section 8.10.4)
The City will ensure that new development pays a fair share contribution to upgrade and expansion of the circulation system.	The project proponent will submit the necessary fees described in this policy, as determined by the County. (Section 8.10.7)
The City will promote the expansion of Manning Avenue to Interstate 5.	The project will not interfere with the County's plans to support improvements for this extension. (Section 8.10.4)
The City will promote the continued freight service on the Southern Pacific rail line.	The project will not interfere with the County's plans to promote service. (Section 8.10.4)
The City will promote a truck route system that is safe and efficient for the community.	The project will not interfere with the County's plans to promote the system and will adhere to safety and efficiency goals that the County identifies. (Section 8.10.4)

8.10.2.4 Compliance with Laws, Ordinances, Regulations, and Standards

All applicable LORS and administering agencies are summarized subsequently. Table 8.10-2 describes how CVEC will comply with all LORS pertaining to traffic and transportation impacts.

8.10.3 Affected Environment

The regional transportation network for the area around the CVEC is shown in Figure 8.10-1. The plans and programs described in Tables 8.10-1 and 8.10-2 lay out a framework for managing the transportation resources in the area of the CVEC project site. The site is located adjacent and to the west of the intersection of West Colorado Avenue and Springfield Avenue. Access to the site will be provided on Cherry Lane between West Manning Avenue and West Springfield Avenue. Cherry Lane will be upgraded and extended from Colusa Avenue to the project site. Cherry Lane will undergo upgrade to be consistent with County and City standards. Most of the project site will be paved to provide internal access to all project facilities and onsite buildings. The areas around equipment, where not paved, will have gravel surfacing. See Section 2.0, Project Description, for further discussion of the project site.

TABLE 8.10-2
Compliance with Laws, Ordinances, Regulations, and Standards

LORS	Regulating Agency	Purpose	Applicability (AFC Section Explaining Conformance)
49 CFR, Section 171-177 and 350-300 Chapter II, Subchapter C and Chapter III, Subchapter B	US Department of Transportation and Caltrans	Requires proper handling and storage of hazardous materials during transportation.	Project and transportation will comply with all standards for the transportation of hazardous materials. (Section 8.10.4)
CVC §31300 et seq.	Caltrans	Requires transporters to meet proper storage and handling standards for transporting hazardous materials on public roads.	Transporters will comply with standards for transportation of hazardous materials on state highways during construction and operations. The project will conform to CVC § 31303 by requiring that shippers of hazardous materials use the shortest route possible to and from the site. (Section 8.10.4)
CVC §§31600 – 31620	Caltrans	Regulates the transportation of explosive materials.	The project will conform to CVC 31600 – 31620. (Section 8.10.4)
CVC §§ 32000 – 32053	Caltrans	Regulates the licensing of carriers of hazardous materials and includes noticing requirements.	The project will conform to CVC 32000 – 32053. (Section 8.10.4)
CVC §§ 32100 – 32109 and 32105	Caltrans	Establishes special requirements for the transportation of substances presenting inhalation hazards and poisonous gases. Requires that shippers of inhalation or explosive materials contact the CHP and apply for a Hazardous Material Transportation License.	The project will conform by requiring shippers of inhalation or explosive materials to contact the CHP and obtain a Hazardous Materials Transportation License. (Section 8.10.4)
CVC §§ 34000 –34121	Caltrans	Establishes special requirements for the transportation of flammable and combustible liquids over public roads and highways.	The project will conform to CVC §§ 34000 – 34121. (Section 8.10.4)
CVC §§ 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5 and 34510-11	Caltrans	Regulates the safe operation of vehicles, including those used transport hazardous materials.	The project will conform to these sections in the CVC. (Section 8.10.4)
CVC §§ 35550-35559	Caltrans	Regulates weight and load limitations	The project will conform to these sections in the CVC. (Section 8.10.4)
CVC §§ 25160 et seq.	Caltrans	Addresses the safe transport of hazardous materials.	The project will conform to these sections in CVC. (Section 8.10.4)

TABLE 8.10-2
Compliance with Laws, Ordinances, Regulations, and Standards

LORS	Regulating Agency	Purpose	Applicability (AFC Section Explaining Conformance)
CVC §§ 2500-2505	Caltrans	Authorizes the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives.	The project will conform to these sections in the CVC. (Section 8.10.4)
CVC §§ 13369, 15275, and 15278	Caltrans	Addresses the licensing of drivers and classifications of licenses required for the operation of particular types of vehicles. In addition, certificates permitting the operation of vehicles transporting hazardous materials are required.	The project will conform to these sections in the CVC. (Section 8.10.4)
S&HC §§ 117, 660-711	Caltrans	Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery.	Encroachment permits will be obtained by transporters, as required. (Section 8.10.7)
CVC §35780; S&HC §660-711; 21 CCR 1411.1-11411.6	Caltrans	Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	Transportation permits will be obtained by transporters for all overloads, as required. (Section 8.10.7)
S&HC §§ 660, 670, 1450, 1460 *et seq.*, 1470, and 1480	Caltrans	Regulates right-of-way encroachment and the granting of permits for encroachments on state and county roads.	The project will conform to these sections in the CVC. (Section 8.10.7)
California State Planning Law, Government Code Section 65302	Caltrans	Project must conform to the General Plan.	Project will comply with Fresno County General Plan and City of San Joaquin Comprehensive General Plan and EIR. (Section 8.10.2)
Circulation and Transportation Element of the Fresno County General Plan and City of San Joaquin Comprehensive General Plan and EIR	Fresno County/City of San Joaquin	Specifies long-term planning goals and procedures for transportation infrastructure system quality in Fresno County and the City of San Joaquin, respectively.	Project will comply with goals and policies for County and City transportation and traffic system. (Section 8.10.2)

CCR California Code of Regulations
CFR Code of Federal Regulations
CVC California Vehicle Code
S&HC California Streets and Highways Code

8.10.3.1 Current and Projected Roadway and Highway Traffic Characteristics

The roadways and highways that would serve the CVEC are shown in Figure 8.10-2. The roadways that would serve CVEC are West Colorado Avenue, Manning Avenue, Cherry Lane and Springfield Avenue. Three state highways serve the project area: State Route 99, State Route 33, and Interstate 5 (I-5). Caltrans maintains these highways.

For the roadways and highways in the project area as defined above, Table 8.10-3 identifies the existing roadway classification, number of lanes, existing annual average daily traffic (AADT), annual average peak hour traffic, annual average daily truck traffic, percent of truck traffic, highway capacity, and level of service (LOS) for the highways and roadways that would serve CVEC. Also presented in Table 8.10-3 are the estimated future traffic characteristics without the project for 2004. Highway traffic estimates are presented for available mileposts or junctions for regional and local roadways in the general vicinity of CVEC. A description of each roadway follows.

West Colorado Avenue is a 40-foot wide, 2-lane roadway with 10-foot-wide shoulders and no sidewalks. West Colorado Avenue serves as a major arterial and gives egress and ingress to San Joaquin City. West Colorado Avenue is classified as a major arterial roadway/ expressway, with good bituminous quality pavement according to the Fresno County General Plan (January 2000), and Fresno County engineering department (Palacias, 2001). It has a posted speed limit of 55 miles per hour (mph). West Colorado Avenue runs northwest and southeast.

Manning Avenue is a 32-foot-wide, east-west 2-lane roadway with 15-foot-wide shoulders, with sidewalks on the north side between South Sutter Avenue and West Colorado Avenue. Manning Avenue, in addition to West Colorado Avenue, serves as a major arterial and gives egress and ingress to San Joaquin City. Manning Avenue is classified as a major arterial roadway/expressway with good bituminous quality pavement according to the Fresno County General Plan (Fresno County, 2001), and Fresno County Engineering Department (Palacias, 2001). It has a posted speed limit of 55 mph. Manning Avenue is also a major connector between Fresno County and I-5.

Cherry Lane is a two-lane private roadway east of Colusa and is currently not maintained by Fresno County. This road would serve as the primary entrance road for the project, and would undergo improvement as described in Section 8.10.4.

West Springfield Avenue is an 18-foot-wide, east and west paved roadway with 6-foot-wide shoulders and sidewalks. West Springfield Avenue is classified as a local roadway, according to the Fresno County Engineering Department (Palacias, 2001). It has a posted speed limit of 35 mph. West Springfield Avenue east of Placer Avenue reduces down to a 13-foot-wide paved roadway.

Table 8.10-4 shows the average daily traffic (ADT) volumes on the local roadways in the study area for available traffic data from the County of Fresno (1997 through 2000). Year 2000 ADTs are estimated at a 3 percent growth factor. Figure 8.10-2 illustrates the existing 2000 ADTs of the potential affected roads surrounding the project site.

TABLE 8.10-3
Existing Traffic Characteristics for Streets and Highways for CVEC

						Existing			Future, No Project Conditions (2004)		
Roadway	**Classification**	**Number of Lanes**	**Hourly Design Capacity[a]**	**Average Daily Volume[b]**	**p.m. Peak Hour Volume[c]**	**p.m. Peak Hour LOS[d]**	**Average Daily Truck Traffic**	**Estimated Truck Percentages**	**Estimated Daily Volume**	**Estimated p.m. Peak Hour Volume**	**Estimated PM Peak Hour LOS**
West Colorado Avenue (East of El Dorado)	Expressway	2	3,000	2,295*	230*	A	NA	20	2,585	260	A
West Manning Avenue (East of South Placer Avenue)	Expressway	2	3,000	1,935*	195*	A	NA	30	2,180	220	A
West Cherry Lane (West of Colusa Avenue)	Local Road	2	1,400	NA	NA	NA	NA	NA	NA	NA	NA
West Springfield Avenue (West of West Colorado Avenue)	Local Road	2	1,400	NA	NA	NA	NA	NA	NA	NA	NA
State Route 99 (at MP 9.16, Manning Avenue)	Highway	6	1,400	71,000[e]	6,200[e]	C	15,700[e]	24[f]	80,000	6,980	D
State Route 33 (at MP 39.85, North Junction Route 5)	Highway	2	NA	2,150[e]	220[e]	A	609[e]	29[f]	2,400	250	A
Interstate 5 (at MP 29.96 Junction Route 33 North)	Highway	4	NA	28,000[e]	4,700[e]	C	NA	NA	32,000	5,300	D
Interstate 5 (at MP 38.36 Kamm Avenue)	Highway	4	NA	29,000[e]	4,850[e]	C	NA	NA	33,000	5,500	D

NA Not Available
[a] Maximum number of vehicles per hour in both directions for LOS E.
[b] Estimated number of vehicles per day in both directions.
[c] Vehicles per hour in both directions.
[d] LOS based on Highway Capacity Manual methods (Transportation Research Board, 1997).
[e] Caltrans, 2000.
[f] Caltrans, 1998.

TABLE 8.10-4
Estimated Average Daily Traffic Volumes

Roadway	1997 ADT	1998 ADT	1999 ADT	2000 ADT
West Colorado Avenue (East of El Dorado)	2,100	2,165 [a]	2,230 [a]	2,295 [a]
Manning Avenue (West of Yuba Ave)	1,770 [a]	1,823 [a]	1,878 [a]	1,935 [a]
Cherry Lane	NA	NA	NA	NA
Springfield Avenue	NA	NA	NA	NA

Source: Fresno County Engineering Department

[a] Estimated using a 3 percent growth factor based on historic growth in the area
ADT average daily traffic
NA Not Available

LOS is a qualitative measure describing operational conditions in a traffic stream, and motorists' or passengers' perceptions of those conditions. LOS for the roadways and highways affected by the project are presented in Table 8.10-3. An LOS definition generally describes these conditions in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. (LOS A represents best condition, and LOS F represents the worst). To determine the LOS for selected highways and roadways in the study area, daily traffic capacity was determined by estimating capacities obtained from the current Highway Capacity Manual (HCM) (Transportation Research Board, 1997). Daily traffic volumes (Table 8.10-4) were compared with these capacities to determine volume-to-capacity ratios, which were used to calculate the existing LOS.

According to Caltrans policy, LOS D threshold for roadway degeneration is acceptable for planning purposes. Currently, all of the highways potentially affected by CVEC are operating at or above LOS B.

The overall LOS for the roadways surrounding the proposed project site prior to construction is LOS A, which represents free-flow traffic operating conditions. Individual users are virtually unaffected by the presence of others in the traffic stream. There is no intersection data available to analyze intersection impacts.

In the future, it is estimated that during the evening peak hour in 2004, all roadways in the project vicinity will function at LOS B or better, (without the project). For the highways, assuming a 55/45 peak hour directional split at a 3 percent growth rate, all routes are estimated to be at LOS D or better for future conditions.

8.10.3.2 Truck Routes, Weight and Load Limitations

In addition to Caltrans and the California Vehicle Code Sections 35550-35559, Fresno County Maintenance and Operation Department states that there are no weight and load limitations for West Colorado, Manning, and Springfield Avenues (Palacias, 2001).

Due to the agricultural base of the community, goods movement is an important factor to the local circulation system. The City of San Joaquin encourages truck traffic routed on Manning Avenue and West Colorado Avenue.

Fresno County Maintenance and Operation Department states that there are no weight and load limitations on the planned roadways (West Colorado Avenue, Manning Avenue, Springfield Avenue).

8.10.3.3 Accident Rates and Public Safety

8.10.3.3.1 Accident Rates

Accidents are generally expressed in terms of accident rate, where accident occurrence is indexed to the amount of traffic using a given roadway. For roadway segments, accident rates are computed as the number of accidents per million vehicle-miles (mvm) of travel.

The total number of accidents reported in the project vicinity and accident rates for selected roadways are presented in Table 8.10-5. West Colorado Avenue, Manning Avenue, Cherry Lane, and Springfield Avenue accident rates are all within acceptable limits according to Caltrans 1999 Accident Data Report on State Highways for these type of roadways and highways.

TABLE 8.10-5
Recent Accident History Data for Highways and Roadways in the Project Vicinity

		Number of Accidents		Accident Rate
Roadway	**Section**	**3-year Total**	**Average per Year**	**MVM**
West Colorado Ave.[a]	El Dorado Ave./Plumas Ave.	4	1.5	0.9
Manning Avenue [a]	El Dorado Ave./Plumas Ave.	2	0.6	0.5
Cherry Lane[a]	NA	NA	NA	NA
Springfield Avenue [a]	NA	NA	NA	NA
I-5 [b]	Mile Post 17.96 – 38.35	209	70	0.36
SR 33 [b]	Mile Post 29.00 – 62.24	44	15	1.0
SR 99 [b]	Mile Post 6.83 – 26.55	1008	336	0.69

[a] Source: Fresno County Operations and Maintenance Department (1999 to 2001)
[b] Source: California Department of Transportation (1999 - 2001), Caltrans 2001.
NA Not Available
MVM million vehicle-miles.

8.10.3.3.2 Public Safety

The roadways that will be used for the project do not pose a public safety hazard. Roadways that will be used for the project are generally of consistent width and the pavement appears to be in good condition. Section 8.10.3.1 describes the general width of the roadways that will be used for the project, which are suitable without any abrupt changes to note. Lane widths are approximately 16 to 20 feet and acceptable for typical traffic movements and roads have adequate shoulders.

The horizontal and vertical site distances on the roadways used for the project are generally unobstructed because of the generally flat topography in the area of the project.

Railroad crossings at grade exist at the intersections of West Colorado Avenue/Manning Avenue and West Colorado Avenue/Springfield Avenue. The crossing at West Colorado Avenue/Manning Avenue intersection is striped, marked, signalized and has crossing arms.

8.10.3.4 Transportation Improvements

8.10.3.4.1 Future Plans and Projects

No major future plans or projects affecting transportation or circulation were identified in the City of San Joaquin General Plan and EIR (1996).

8.10.3.4.2 Local Comprehensive Transportation Plans

The City of San Joaquin General Plan and EIR indicates no major improvements to the transportation system in the County. However, the City of San Joaquin completed improvements to Manning Avenue support County efforts for the expansion of Manning Avenue to I-5.

8.10.3.5 Pedestrian/Bicycle Facilities

The City of San Joaquin General Plan and EIR indicate the desire to enhance current pedestrian facilities and possibly expand such facilities in the future. In addition to pedestrian facility enhancements, the City has applied for bicycle facility funding for both commuter and recreational activities. However, there are no active bicycle facilities development within the proposed project vicinity.

8.10.3.6 Public Transportation

The City of San Joaquin is a member of the Fresno County Rural Transit Agency (FCRTA). FCRTA is responsible for overall coordination of intra-city and inter-city services for rural public transit in Fresno County and 13 rural incorporated cities in the County. FCRTA also provides publicly operated demand response wheelchair accessible transit service. The City of San Joaquin General Plan and EIR states that the City will maintain current public transportation facilities services, but did not indicate future plans for expansion.

8.10.3.7 Rail Traffic

Union Pacific Railroad (UPRR) operates an active main line on the north border of the project site. The UPRR right-of-way (ROW) parallels the south side of West Colorado Avenue and is used primarily for freight service.

A railroad spur would be extended from the existing UPRR line at the project site to deliver larger equipment to the project site.

8.10.3.8 Air Traffic

The nearest major airport is located in the City of Fresno approximately 43 miles away from the project site. Any future expansion of the Fresno Airport of any type will not impact the project site. The project site is within an agricultural area that could have private landing strips for agricultural uses in the general area of the project site.

8.10.4 Environmental Consequences

This section identifies the significance criteria and describes the potential impacts of the CVEC project resulting from the construction phase and plant operation.

8.10.4.1 Significance Criteria

A project is generally considered to have a significant impact if it will cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Local policies (both city and county) are intended to prevent degradation of the public road service below an adopted LOS. As described in Fresno County General Plan, LOS C at peak hour is a reasonable and achievable standard for major arterial roadways. However, it is also acceptable for the LOS of the roadways to drop from C to D if it is only for a short duration, such as during construction (Ahmady, 2001). On the basis of historical trends for roadways affected by the project, a 3 percent growth factor is assumed in establishing impacts on future background levels of traffic. This growth factor is considered reasonable because of the area's rural nature.

8.10.4.2 Summary of Construction Phase Impacts

Construction of the generating facility, from site preparation and grading to commercial operation, is expected to take place from third quarter 2002 to third quarter 2004.

Table 8.10-6 indicates the total daily construction-related vehicle trip generation, based on the estimated peak workforce for the site and transmission line. Table 8.10-7 indicates the estimated daily and evening peak traffic volumes and LOS expected during the construction of the project. The increase in daily and p.m. peak traffic, in addition to changes in the LOS would not have an adverse impact on highways and roadways in the project vicinity. The increase in total daily construction-related vehicle trip generation would not have an adverse impact on highways and roadways in the project vicinity for the following reasons.

TABLE 8.10-6
Total Daily Construction-Related Vehicle Trip Generation at the Project Site[a]

Average Work Force	Average Daily Vehicle Trips	Peak Workforce	Peak Daily Vehicle Trips[b]
205 workers	315	386	594

[a] This analysis assumes a 1.3 Average Vehicle Occupancy (AVO).
[b] Does not include linear construction trips. Construction trips for linears and project site is estimated to be 938.

Due to the relatively small size of the peak construction workforce and truck traffic, the only noticeable impact will be localized near the construction site. Comparing Tables 8.10-3 and 8.10-7, West Colorado and Manning avenues experience a reduction in the LOS. However, the change from LOS A to LOS B still meets Fresno County standards.

Additionally, the increase in construction-related vehicle trip generation would not be adverse because construction typically begins at 6 a.m. and finishes early, limiting the number of vehicles during peak-hour traffic periods, thus reducing potential traffic effects.

Details of potential construction impacts to transportation and traffic conditions are discussed below.

8.10.4.2.1 Plant Construction

There will be an average and peak workforce of approximately 205 and 386, respectively, consisting of construction craft people, supervisory, support, and construction management personnel on site during construction of the plant and transmission line. It is anticipated that most of the construction workforce will be drawn from the cities of Fresno and Clovis in Fresno County as well as parts of Madera County. The peak construction site and transmission line workforce level is expected to last from Month 11 through Month 17 of the construction period. During the peak construction period, using a 1.3 average vehicle occupancy (AVO) for commuting, construction workers will generate an estimated 593 daily trips, 297 of which will occur during the evening peak-hour. Construction will be scheduled to occur between 6 a.m. and 6 p.m., Monday through Saturday. Additional hours may be necessary to make up schedule deficiencies, or to complete critical construction activities. During some construction periods and during the startup phase of the project, some activities may continue 24 hours a day, into Sunday.

Construction laydown and parking areas will be located on an approximate 20-acre parcel within the CVEC parcel, north of the proposed plant footprint. Construction traffic is anticipated to use Cherry Lane. Cherry Lane will be upgraded to conform with City codes and standards. Materials and equipment will be delivered by truck and rail.

TABLE 8.10-7
Future No Project and Project Traffic Characteristics

			Future Project Conditions During Construction (2002 – 2004)						Future Project Conditions During Operation (2004)		
Roadway	**Classification**	**Number of Lanes**	**Estimated Daily Construction Trips**	**Combined Daily Traffic**	**p.m. Peak Construction Trips**	**Combined p.m. Peak Traffic**	**Estimated LOS**	**Estimated Increase in Daily Volume[a]**	**Estimated Daily Volume**	**Estimated p.m. Peak Traffic**	**Estimated LOS**
West Colorado Avenue (east of El Dorado)	Expressway	2	938	3,523	469	729	C	37	2,622	265	A
West Manning Avenue (east of South Placer Avenue)	Expressway	2	938	3,118	469	689	C	37	2,217	225	A
West Cherry Lane (west of Colusa Avenue)	Local Road	2	938	938	469	469	N/A	37	94	22	A
West Springfield Avenue (west of West Colorado Avenue)	Local Road	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
State Route 99 (at MP 9.16, Manning Avenue)	Highway	6	938	80,938	469	7,449	D	37	80,037	7,020	D
State Route 33 (at MP 39.85, North Junction Route 5)	Highway	2	938	3,338	469	709	C	37	2,437	245	A
Interstate 5 (at MP 29.96 Junction Route 33 North)	Highway	4	938	32,938	469	5,769	D	37	32,037	5,340	D
Interstate 5 (at MP 38.36 Kamm Avenue)	Highway	4	938	33,938	469	5,969	D	37	33,037	5,540	D

[a] Total increase in daily volume is 30 vehicles, assumed to be distributed evenly among the routes shown.

Increases in traffic due to construction will consist of deliveries of plant equipment and construction materials, such as concrete and steel, by truck. It is anticipated that rail deliveries will include major components of the heat recovery steam generator, combustion turbine generator and steam turbine generator; truck deliveries would include piping, supports, and valves; concrete and reinforcing steel; construction consumables; and office supplies.

Construction of CVEC will require the use and installation of heavy equipment and associated systems. Construction materials will be delivered continually to the site by trucks. The number of trucks used during construction is expected to be small. Approximately 10 trucks are estimated to be used daily during construction. Most major pieces of construction equipment will remain within the construction lay-down area during construction. A conservative, "worst case" estimated number of daily trucks during the peak construction period is about 20 trucks per day.

The average increase of 10 additional daily truck trips (with 20 truck trips maximum) on state routes in the CVEC area is minor compared with existing truck traffic on these routes and will represent a minimal increase in truck traffic along the proposed routes of travel. Therefore, the impact of truck traffic on state routes is considered to be less than significant.

The average increase of 10 additional daily truck trips (with 20 truck trips as a worst case scenario) on local roads in the CVEC area is minor compared with existing truck traffic on these roads and will represent a minimal increase in truck traffic along the proposed routes of travel. Due to the size and weight of these trucks, the increase in truck traffic will contribute to the wear on the roads and will increase the need for regular roadway maintenance. The increase in project-related roadway wear and tear is not considered to be significant. West Springfield Avenue may require additional right-of-way to widen it beyond the current 13-foot-wide street east of Placer. Cherry Lane is a private road and would be upgraded to public street standards. Both West Springfield Avenue and Cherry Lane would be upgraded to conform to local codes.

The vehicles used to transport heavy equipment and construction materials will require transportation permits when they exceed the size, weight, width, or length thresholds set forth in Section 35780 of the CVC, Sections 117 and 660-711 of the S&HC, and Sections 1411.1 to 1411.6 of the California Code of Regulations. Affected vehicles will be required to obtain transportation permits from the City of San Joaquin, Fresno County, and Caltrans.

Transport route arrangements would be required with Caltrans officials for permitting and escort, as applicable. Generally, only small quantities of hazardous materials will be used during the construction period, as described in Section 8.12, Hazardous Materials Handling. They may include gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner. Because of the small quantities of hazardous materials involved, separate truck deliveries of hazardous materials during construction are unlikely.

Construction debris and small quantities of hazardous wastes will be generated during construction (see Section 8.13, Waste Management). During construction, a minimal number of truck trips per month will be required to haul waste for disposal. Transportation of hazardous materials to and from the CVEC site will be conducted in accordance with CVC Section 31303. Because the transport of hazardous wastes will be conducted in accordance with the relevant transportation regulations, no significant impact is expected.

Increases in potential public safety hazards at road crossings near the project site are not anticipated as a result of construction traffic. Roadway cross sections, intersection configurations and horizontal and vertical site distances will not be impacted by the construction traffic to create or aggravate public safety problems. Construction traffic crossing the West Colorado/Manning intersection is not anticipated to increase hazards associated with rail traffic because the intersection is signalized.

Construction traffic will be directed to avoid the West Colorado Avenue/Springfield Avenue intersection to minimize the potential for construction traffic interfering with rail traffic. Potential impacts to public safety as a result of construction traffic near the project site are not significant.

All road crossing construction activities will be in accordance with local, state, and federal regulatory requirements and specifications. Adequate barricades and lights will be provided around excavations at crossings in accordance with Caltrans "Manual of Traffic Controls for Construction and Maintenance of Work Zones" and CVC Section 21400. A construction management plan will be developed for this project.

8.10.4.2.2 Water Pipeline and Related Facilities

Construction of the water pipeline, extraction wells, and related facilities will require a peak workforce of approximately 113 people, and will be completed over a 12-month period. During the peak construction period, using a 1.3 vehicle occupancy for commuting, construction workers will generate an estimated 175 daily trips, 90 of which will occur during the p.m. peak time periods.

8.10.4.2.3 Gas Pipeline

Construction of the gas pipeline will require a peak workforce of approximately 111 people, and will be completed over a period of 12 months. During the peak construction period, using a 1.3 vehicle occupancy for commuting, construction workers will generate an estimated 170 daily trips, 85 of which will occur during the p.m. peak time periods.

8.10.4.2.4 Transmission Lines

The workers required to construct the electric transmission line are included in the power plant construction workforce estimates. They are not considered to have a significant impact. The staging area will serve as the lay down area. Construction vehicles will be used when necessary to construct the transmission line.

8.10.4.3 Operation Phase Impacts

Permanent access to the site would be via Cherry Lane from Colusa Avenue, on the west side of the project site. Extension of Cherry Lane is shown in Figure 8.10-3 and discussed in Section 8.10.4.2.1.

There will be approximately 30 full-time employees working at the plant. Three operators will work 12-hour rotating shifts (8 a.m. to 8 p.m. and 8 p.m. to 8 a.m.), 7 days per week. The standard shift for the maintenance technicians and administrative positions will be 8 hours per day (8 a.m. to 5 p.m.), 5 days per week, with unscheduled days and hours as required (weekends). Thus, only 15 personnel would commute during the p.m. peak on any workday. See Section 8.8, Socioeconomics, for further worker detail.

Table 8.10-7 shows projected current daily volume in 2004 and LOS on nearby roadways, and daily volumes and LOS under the worst case. As indicated in the table, both county roads remain at LOS A, which meets Fresno County and City of San Joaquin LOS standards.

During plant operations, trucks will regularly deliver/pickup replacement parts, lubricants, water treatment chemicals, anhydrous ammonia, sulfuric acid, trash, and other consumables. Table 8.10-8 summarizes expected truck trips for the project, including delivery of hazardous materials and removal of wastes. On average, there will be three truck trips to the project site per day. For further information on the management of hazardous materials and waste products, see Sections 8.12 and 8.13.

TABLE 8.10-8
Estimated Truck Traffic at the Facility During Operation

Delivery Type	Number and Occurrence of Trucks
Anhydrous ammonia	2 per week
Sulfuric acid	1 per month
Cleaning chemicals	1 per month
Trash pickup	1 per week
Non-hazardous solid waste (ZLD solid waste)	11 per week
Lubricating oil	4 per year
Lubricating oil filters	4 per year
Laboratory analysis waste	4 per year
Oily rags	4 per year
Oil absorbents	4 per year
Water treatment chemicals	9 per week

Sulfuric acid and various cleaning and process chemicals are considered hazardous materials. According to CVC Division 13 Section 31303, the transportation of hazardous materials will be on the state or interstate highways that offer the shortest overall transit time possible. Anticipated transport route of hazardous materials would either come from I-5. The routing would be from I-5 to Manning Avenue eastbound, to South Colusa Avenue southbound, to West Cherry Lane eastbound.

Anhydrous ammonia is considered a potential inhalation hazard. CVC Division 14.3 Section 32105 specifies that unless there is not an alternative route, every driver of a vehicle transporting inhalation hazards shall avoid, by pre-arrangement of routes, driving into or through heavily populated areas, congested thoroughfares, or places where crowds are assembled.

Additionally, transporters of inhalation hazardous or explosive materials must contact the CHP and apply for a Hazardous Material Transportation License. Upon receiving this license, the shipper will obtain a handbook, which will specify the routes approved to ship inhalation, hazardous, or explosive materials. The exact route of the inhalation or explosive material shipment will not be determined until the shipper contacts the CHP and applies for a license. Transportation impacts associated with power plant operations will not be significant for the following reasons:

- Visits by trade persons, vendors, consultants, and other non-plant personnel are expected to be minimal and would likely occur primarily during non-peak commute periods.
- Delivery of hazardous materials will occur over prearranged routes and will be in compliance with all laws, ordinances, regulations, and standards (LORS) governing the safe transportation of hazardous materials.

Increases in potential public safety hazards at road crossings near the project site are not anticipated as a result of operations traffic. Roadway cross sections, intersection configurations, and horizontal and vertical site distances will not be impacted by the operations traffic to create or aggravate public safety problems. Operations traffic crossing the West Colorado/Manning intersection is not anticipated to increase hazards associated with rail traffic because the intersection is signalized.

Potential impacts to public safety as a result of operations traffic near the project site are not significant.

8.10.5 Cumulative Impacts

As described above, the available capacity of the regional state routes and local roads in the Fresno County and San Joaquin City area shows the regional transportation system has the capacity to accommodate future traffic including that resulting from the proposed construction and operation of CVEC. There are no other known proposed projects whose workforce and/or material deliveries would concurrently travel the same state routes and local roadways (see Section 8.4, Land Use). Therefore, there are no significant cumulative traffic impacts.

8.10.6 Mitigation Measures

8.10.6.1 Construction Phase

Construction of CVEC will add a moderate amount of traffic to state routes and local roadways during the peak construction period. However, because existing roadway capacity is adequate, these project-related traffic increases will not result in significant adverse impacts.

During operation and construction, access to the facility will be provided via West Springfield Avenue and Cherry Lane. Cherry Lane is a private two-lane roadway and West Springfield Avenue is a narrow public roadway, particularly east of Placer. Both of these roads would require upgrading to conform to local codes.

The construction contractor will prepare a construction traffic control plan and construction management plan that addresses timing of heavy equipment and building material deliveries, signing, lighting, traffic control device placement, and establishing work hours outside of peak traffic periods.

Methods for mitigating potential traffic impacts caused by construction may include such activities as stationing flag persons at the access road into the site, and placing advance warning flashes, flag persons, and signage along the roadways associated with the natural gas and water pipelines. Access during pipeline construction will be along existing roads and rights-of-way. Damage to any roadway opened during the construction of the linear lines including natural gas or water pipelines will be repaired to or near its preexisting condition. The construction contractor will work with the local agencies' engineer to prepare a schedule and mitigation plan for the roadways along the construction routes.

It should be noted that most trip reduction strategies are not feasible for the construction phase of the project, primarily because of the differing schedules of trades persons and the need to transport tools and materials to the job site. However, some staggering of the workforce might be possible.

8.10.6.2 Operations and Maintenance Phase

The operations- and maintenance-related traffic associated with the CVEC is considered to be minimal; state routes and local roadways have adequate capacity to accommodate operations-related traffic. Consequently, no operations-related mitigation measures are required for the CVEC.

8.10.7 Permits, Permitting Schedule, and Agency Contacts

Table 8.10-9 presents the permits and permit schedule and agency contacts for CVEC transportation compliance issues.

TABLE 8.10-9
Permits, Permit Schedule, and Agency Contacts for CVEC Traffic and Transportation

Permit	Schedule	Agency Contact
Permit to transport oversized or excessive loads over state highways	Obtain when necessary, 2 hour processing time (single trip) to 2 weeks (annual trip).	Caltrans Dee Garcia (annual) Permit Officer on Duty (single trip) 916-322-1297
Permit to transport oversized vehicles	Obtain when necessary, same day processing.	Caltrans Dee Garcia (annual) Permit Officer on Duty (single trip) 916-322-1297
Hazardous Materials Transportation License	Obtain when necessary, approximately 2 week processing time	CHP Joel Arbuckle 916-445-1865
Permit to ship inhalation hazard or explosive materials	Obtain when necessary, approximately 2 week processing time	CHP Joel Arbuckle 916-445-1865

8.10.8 References

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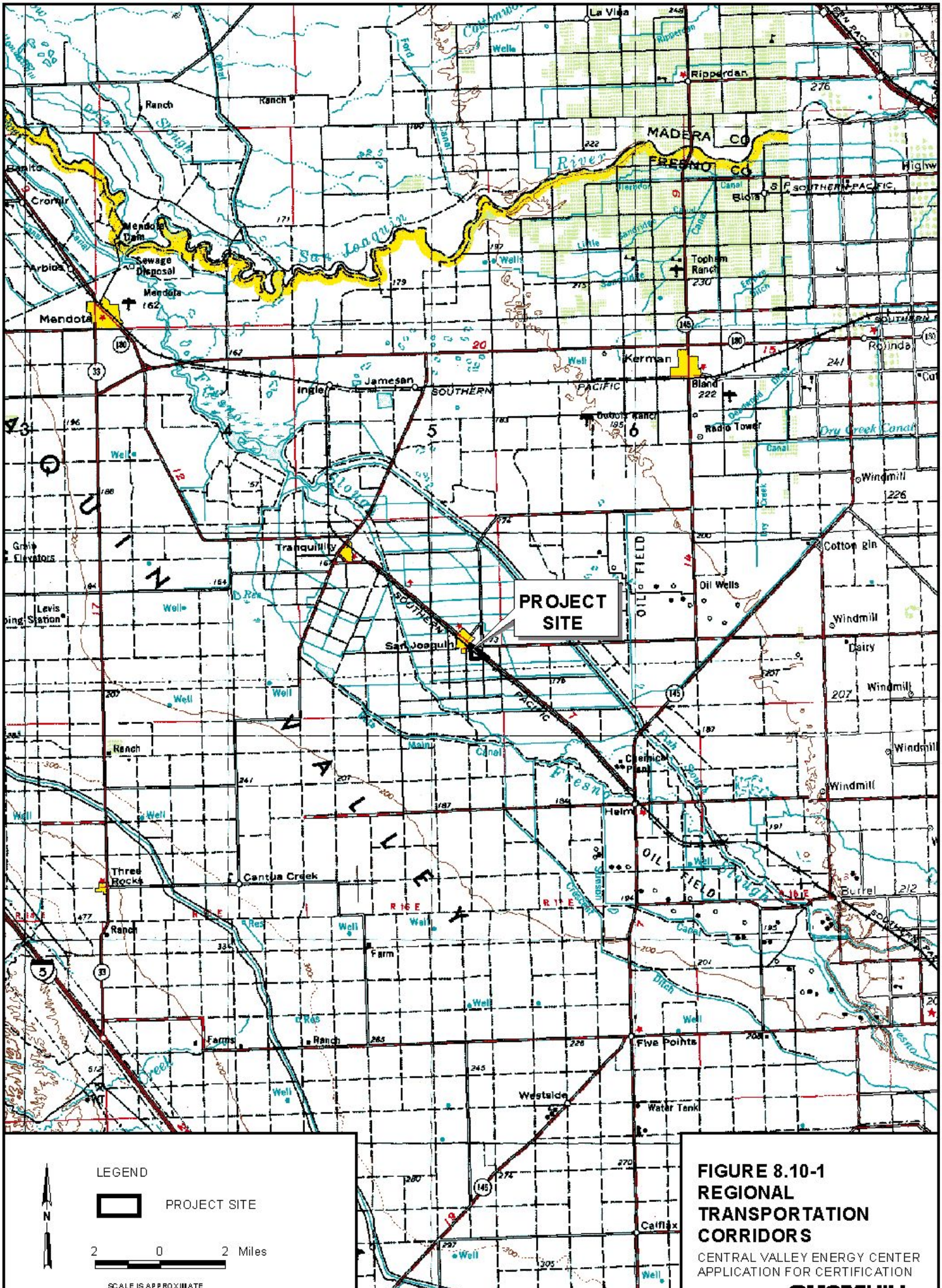

FIGURE 8.10-1
REGIONAL TRANSPORTATION CORRIDORS
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION

CH2MHILL

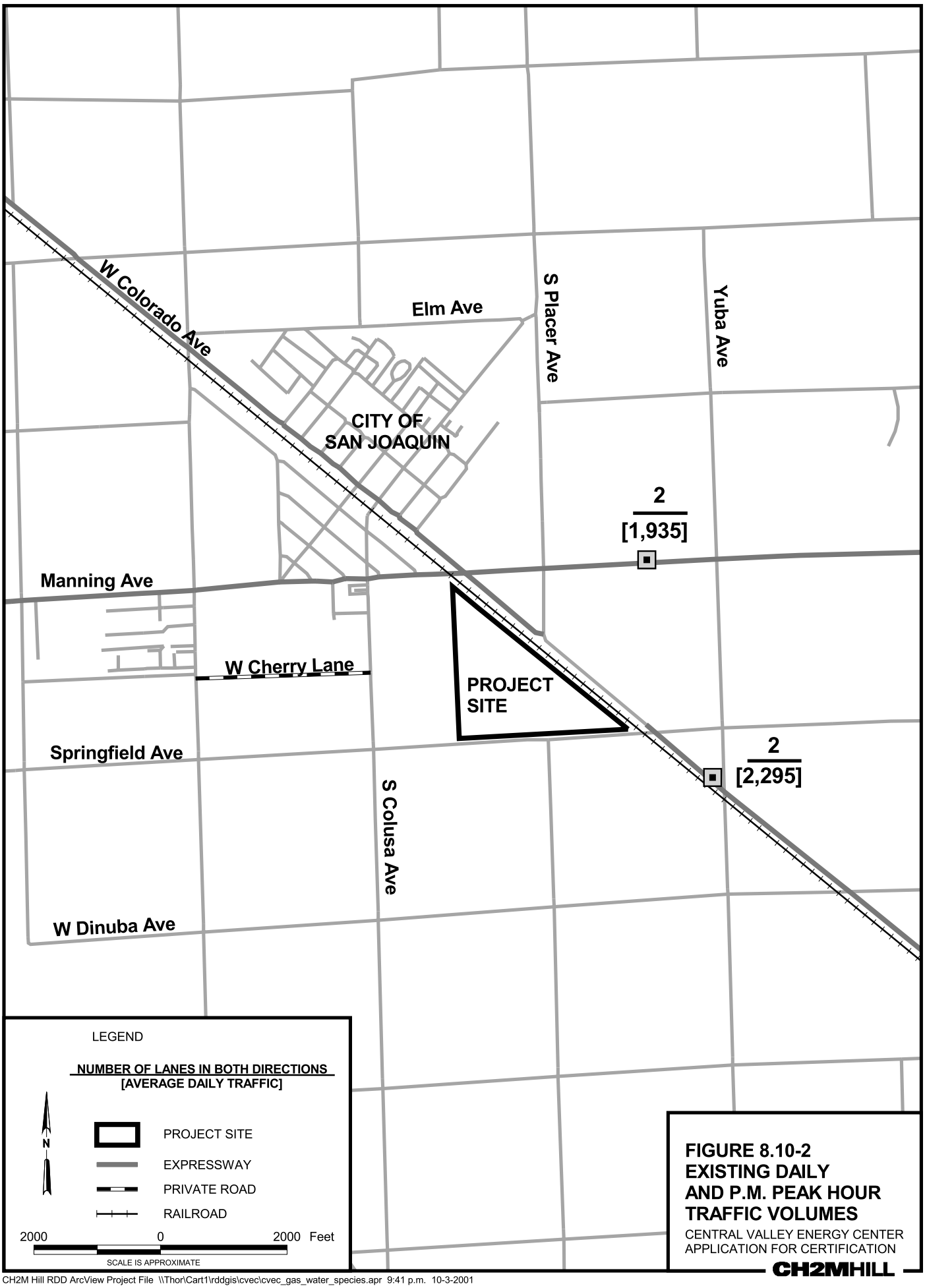

FIGURE 8.10-2
EXISTING DAILY AND P.M. PEAK HOUR TRAFFIC VOLUMES
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION

CH2MHILL

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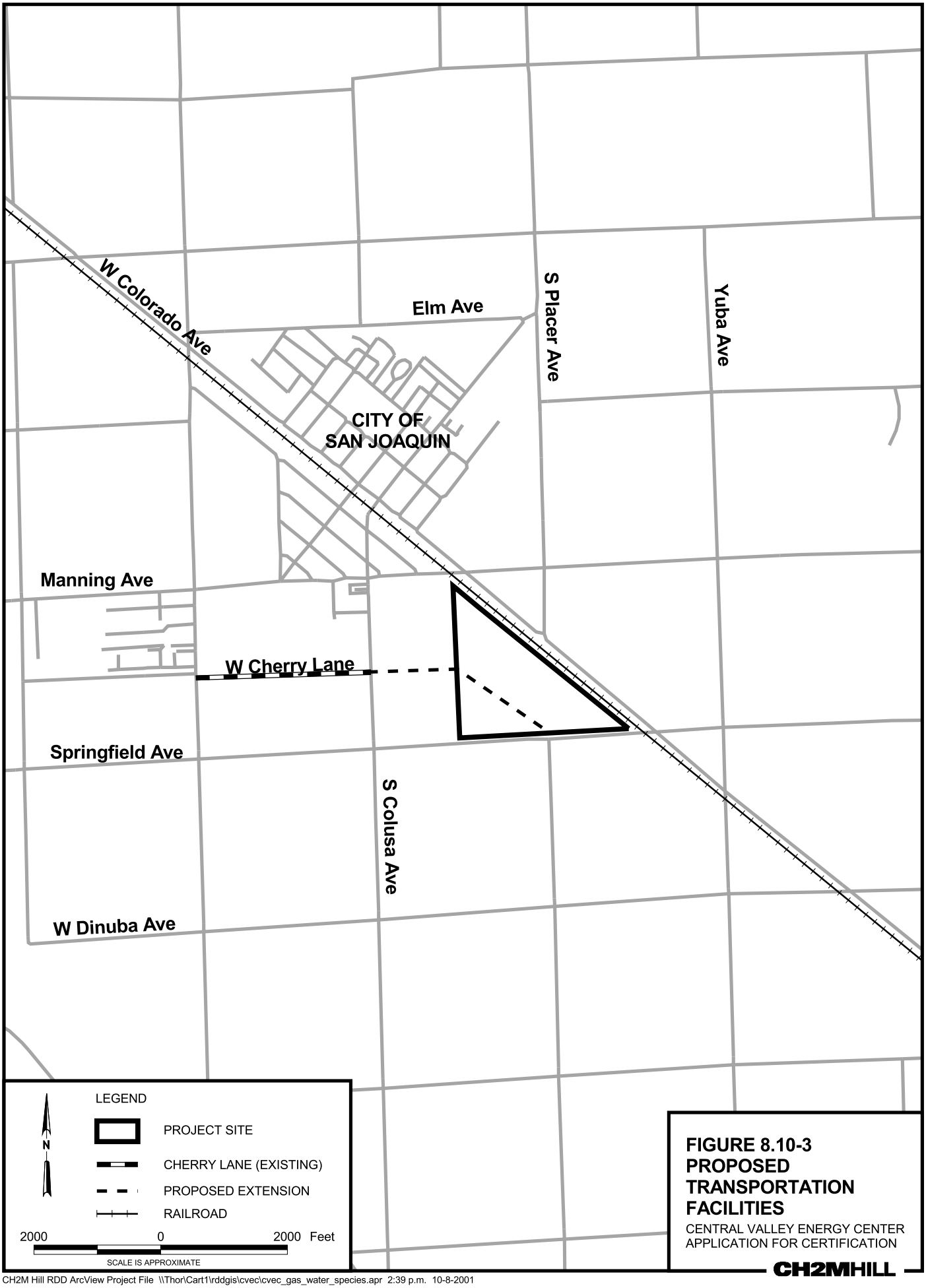

FIGURE 8.10-3
PROPOSED TRANSPORTATION FACILITIES
CENTRAL VALLEY ENERGY CENTER
APPLICATION FOR CERTIFICATION

CH2MHILL

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